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Index Numbers of Railway
Freight Rates.
1913-1938.

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Government
Publications

CANADA
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
TRANSPORTATION & PUBLIC UTILITIES BRANCH

INDEX NUMBERS
OF
RAILWAY FREIGHT RATES
1913 - 1938



OTTAWA
1938

Price 25 cents

DOMINION BUREAU OF STATISTICS
TRANSPORTATION AND PUBLIC UTILITIES BRANCH
OTTAWA

Dominion Statistician, R.H. COATS, LL. D., F.R.S.C., F.S.S. (Hon.)

Chief, Transportation and Public Utilities Branch, G.S. Wrong, B.Sc.

INDEX NUMBERS OF RAILWAY FREIGHT RATES

In 1936 the Dominion Bureau of Statistics issued its first report on index numbers of freight rates, covering rates from 1913 to 1933. A second report was issued early in 1938 revising the data and bringing them up to 1936, and this third report brings them up to August, 1938.

The earlier reports contained brief summaries of the principal general changes in rates and an explanation of the method of computing the index numbers. The rates and index numbers of the second report have been checked and revised and the revisions in this report are due to corrections and not to any change in routes selected or in method.

The revenue per ton mile, computed by dividing the total freight revenue of all railways by the total ton miles of all freight carried, is sometimes used as an index of freight rates but when the relative tonnages of high and low class freight fluctuate widely from year to year it is not a reliable index of freight rates.

Grain and grain products are carried in Canada at relatively low rates. In 1929 the tonnage of grain and grain products carried amounted to 16 per cent of the total revenue freight carried by all railways. In 1932 the percentage increased to 27 per cent of the total. Because of the long haul of grain the ratios of the ton miles would show an even greater spread. For these two years the average revenue per ton mile for all freight dropped from 1.099 cents in 1929 to 0.937 cent, or by 16 per cent. The change in rates had only a minor effect on this average, the change in the consist of the traffic being the main factor.

The method adopted by the Bureau in computing these freight rate index numbers was as follows: first, a list of commodities was selected representative of the seventy-six commodity classes for which the railways report tonnage carried each year; second, a selection was made of hauls for each of these commodities; and third, a compilation was made of the freight rates for each of the selected hauls for the years 1913 to date from the tariffs filed with the Board of Transport. On the assumption that the list of commodities was a fair sample of all freight carried by the railways, that the selected hauls were representative of the actual movement of these commodities, and that the changes in rates on these would be fairly representative of the changes in rates of all freight, weights were given each series and index numbers computed. The selections of commodities and hauls were made with the aid of various returns collected by the

Bureau, railway officials having first hand knowledge of freight movements, and other sources available. Carload commodity rates were used wherever such were in effect. In a number of cases, as a result of commodity rates not being in effect in the earlier years, it was necessary to use the class rates until such time as the lower commodity rate was established. Where commodity rates had not been established in the earlier years and it was considered class rates would have produced distorted trends interpolations of the commodity rates were used.

The rates for the various selected hauls for each commodity were combined by taking the geometric mean of these rates. The geometric mean is the "nth" root of the product of "n" factors and is less than the arithmetic mean of the same factors. The next step was to combine these geometric means representing the freight rates for each commodity. This was done by taking the weighted arithmetic mean. The weights used were the tonnages reported by the railways for 1926 and index numbers for the five commodity groups, "Agricultural Products", "Animal Products", "Mine Products", "Forest Products", and "Manufactures and Miscellaneous" and for the total of all freight were computed using the 1926 data as equal to 100 as a base.

Unquestionably all hauls should be weighted so that changes in rates for hauls with heavy traffic would have a greater influence on the group index than changes in rates for hauls with light traffic. The difficulty has been to secure data on the volume of traffic moving over the various routes. From the Bureau's reports of production and distribution of grain and coal, however, sufficient data were available to compute fairly satisfactory weights for the principal movements of these commodities, which, in tonnages, are by far the most important commodities carried by the railways.

Rates on grain in certain sections of the country are not under the jurisdiction of the Board of Transport and such rates have trends that differ somewhat from rates under the jurisdiction of the Board. Consequently a proper weighting or selection of routes for grain was more important than for other commodities. These exceptions are the rates on grain in the west controlled by the Crow's Nest Pass Agreement.

Coal constitutes between a fifth and a quarter of the total revenue tonnage carried by the railways and consequently the freight rates for the individual hauls of coal also should be weighted as carefully as feasible.

Government subsidies on both eastern and western coal affect the volume of the shipments but not the rates because the subsidies are based on the published railway rates. The reduction of twenty per cent in railway rates under the Maritime Freight Rates Act, 1927, was also a subsidy to shippers, but the reduction applied to all commodities and its effect is reflected in the index numbers.

The revisions mentioned above had very little effect on the index numbers for all freight, especially since 1918. The trend since 1922 has been fairly steadily downward with a very slight upturn in 1938.

The chart on page 4 indicates the sharp rise caused by the general increases after the World War, reaching a peak on September 13, 1920, and the almost equally sharp decline in 1921 and 1922 due to general rate reductions. The table following shows the index numbers of freight rates for each of the five groups and the total, and the table on page 5 shows the commodities for which hauls and rates were compiled and the weights used.

FREIGHT RATE INDEX NUMBERS
(Revised)

1926 = 100

	Agricultural Products	Animal Products	Mine Products	Forest Products	Manufactures and Miscellaneous	Total
Commodities	10	9	9	4	16	48
Rates	112	92	88	49	159	500
<u>Date</u>						
1/ Jan. 1, 1913	84.8	65.7	71.9	65.9	60.4	68.9
Sept. 1, 1914	83.4	65.9	72.7	63.5	60.0	68.4
Dec. 31, 1915	83.4	66.0	69.3	63.5	59.9	67.7
2/ Dec. 1, 1916	84.2	67.6	70.8	64.0	60.8	68.7
Dec. 31, 1917	85.5	68.6	71.4	65.4	61.5	69.6
3/ Mar. 15, 1918	94.3	78.1	81.0	75.3	69.8	78.5
4/ Aug. 12, 1918	110.4	90.3	97.4	86.4	85.9	93.9
Dec. 31, 1919	110.4	90.3	97.4	89.4	85.6	94.0
5/ Sept. 13, 1920	145.3	123.8	114.7	124.5	116.8	124.1
6/ Jan. 1, 1921	143.4	116.8	112.5	117.5	113.1	120.4
7/ Dec. 1, 1921	130.1	106.4	110.4	110.4	104.5	112.1
8/ Aug. 1, 1922	103.0	102.7	103.3	104.2	102.5	103.0
Dec. 31, 1923	101.2	100.3	100.6	101.0	102.6	101.6
Dec. 31, 1924	101.2	100.2	100.6	101.3	100.2	100.6
Dec. 31, 1925	100.1	100.2	100.5	101.3	100.0	100.3
9/ Dec. 31, 1926	100.0	100.0	100.0	100.0	100.0	100.0
July 1, 1927	99.1	100.0	98.7	96.9	99.6	99.1
Dec. 31, 1928	99.1	99.2	98.0	96.9	99.6	98.9
Dec. 31, 1929	98.6	99.2	97.1	96.9	99.0	98.4
Dec. 31, 1930	98.6	99.0	96.0	96.9	99.0	98.1
Dec. 31, 1931	97.3	98.7	96.0	96.9	98.7	97.7
Dec. 31, 1932	97.8	99.6	95.6	96.9	97.3	97.2
Dec. 31, 1933	97.0	99.2	94.9	95.3	96.8	96.5
Dec. 31, 1934	96.2	99.2	93.7	95.3	93.9	94.9
Dec. 31, 1935	95.7	98.2	95.3	94.5	93.8	94.9
Dec. 31, 1936	94.5	98.2	95.5	94.5	93.5	94.6
Dec. 31, 1937	94.9	98.5	95.6	94.9	92.4	94.3
Aug. 1, 1938	96.1	100.0	97.2	94.9	93.2	95.3

/ Western Rates Case.
 / Eastern Rates Case.
 / Fifteen per cent Case.
 / Twenty-five per cent Case.
 / Forty per cent Case.

6/ Five per cent Reduction.
 7/ Ten per cent Reduction.
 8/ General Freight Rate Investigation.
 9/ Maritime Freight Rates Act.

INDEX
NUMBERS

150

130

110

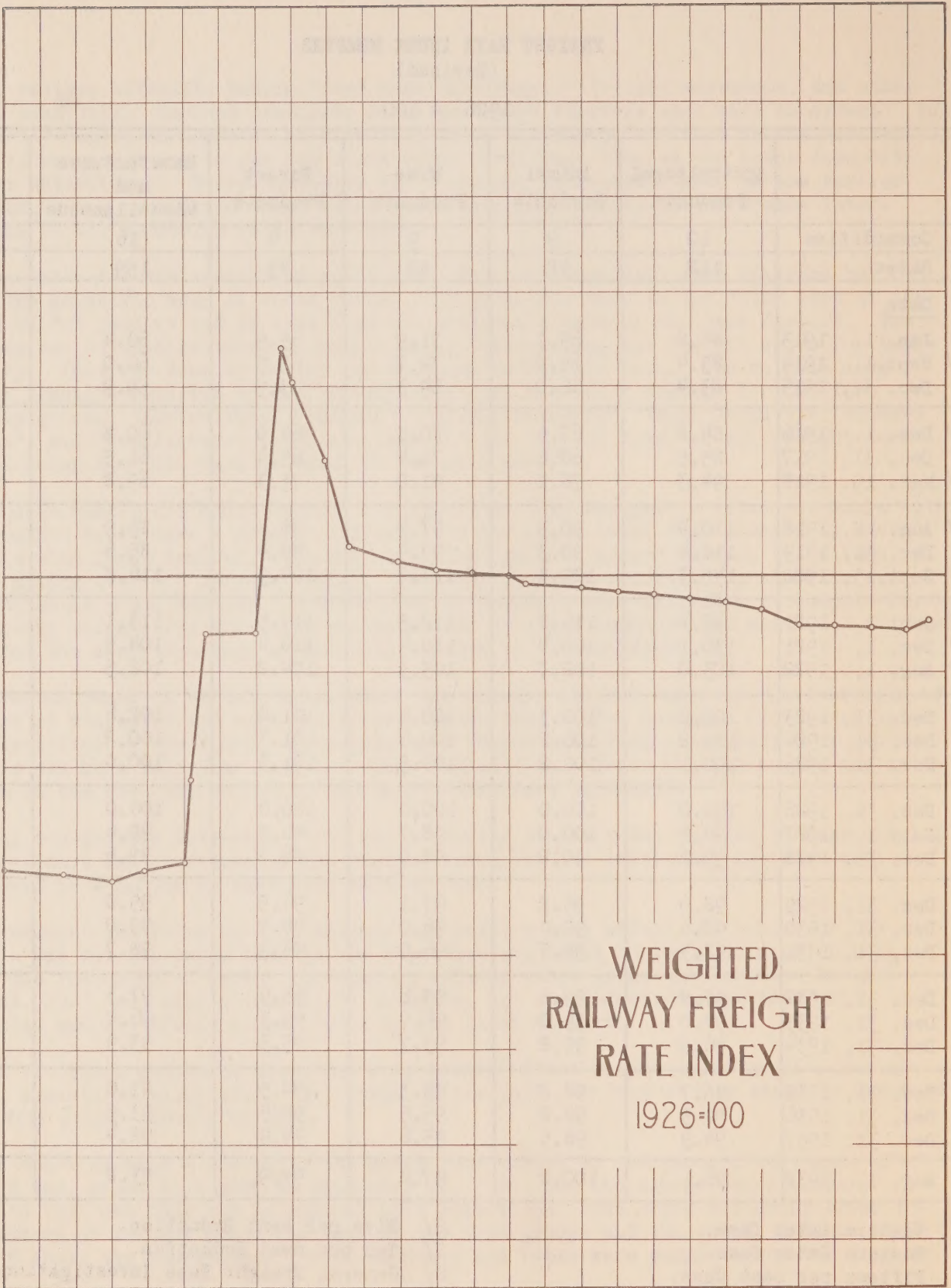
100

90

70

50

30



WEIGHTED
RAILWAY FREIGHT
RATE INDEX

1926=100

1913

1915

1920

1925


1930

1935

1938

TABLE OF COMMODITIES AND WEIGHTS USED

AGRICULTURAL PRODUCTS		ANIMAL PRODUCTS		MINE PRODUCTS		FOREST PRODUCTS		MANUFACTURES AND MISCELLANEOUS	
Wheat	12.65	Horses	0.09	Anthracite Coal ...	5.26	Logs, Posts, Poles and Piling	1.40	Petroleum Products ...	2.40
Corn	0.68	Livestock	1.15	Bituminous Coal ...	13.64	Cordwood and Firewood	2.00	Sugar	0.60
Oats	1.62	Dressed Meats (fresh)	0.46	Lignite Coal	2.50	Pulpwood	3.80	Iron, pig	0.37
Barley	1.17	Dressed Meats, (cured) and other packing house pdts..	0.53	Coke	1.32	Lumber, Timber, Shingles, Box, Crate & Cooperage Material	6.40	Iron and Steel Products	1.47
Rye	0.26	Eggs	0.15	Ores & Concentrates	3.78			Cement	1.10
Flax	0.16	Butter	0.17	Sand and Gravel ...	4.70			Bricks and Artificial Stone	0.88
Flour	2.21	Cheese	0.11	Stone	1.50			Lime and Plaster	0.40
Hay and Straw ...	0.88	Wool	0.05	Asphalt	0.23			Sewer Pipe and Drain Tile	0.10
Apples	0.28	Hides and Leather ...	0.16	Salt	0.34			Agricultural Implements	0.40
Potatoes	0.63							Automobiles	1.68
								Furniture	0.09
								Fertilizers	0.31
								Wood Pulp	1.50
								Newsprint	2.50
								Fish (fresh, frozen and cured)	0.11
								Canned Goods	0.36



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CANADA
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
TRANSPORTATION & PUBLIC UTILITIES BRANCH

General Index
INDEX NUMBERS

OF

RAILWAY FREIGHT RATES

Published by Authority of the HON. W.D. EULER, M.P.,
Minister of Trade and Commerce.

OTTAWA
1936

P R E F A C E

Index numbers measuring changes in wholesale and retail prices of commodities, prices of services, rates of wages, etc. are compiled in all the principal countries, but index numbers of railway freight rates have been practically non-existent. Consequently information as to the general level of freight rates in any country, compared with rates at some previous period, is almost impossible to secure. To fill this gap in Canadian statistics the Dominion Bureau of Statistics began some time ago the computation of an index of railway freight rates by compiling for a series of years the rates charged for a representative list of commodities and for selected hauls and using these rates as a basis. A considerable amount of work was entailed, and owing to staff limitations, the task is only now completed.

The preliminary work was performed by Mr. S.L.T. McKnight, who has since been superannuated, and the report has now been completed by Mr. R.G. Bangs, B.Sc., A.M.E.I.C. under the supervision of Mr. G.S. Wrong, B.Sc., Chief of the Transportation and Public Utilities Branch of the Bureau.

The Bureau gratefully acknowledges the assistance of Mr. W.E. Campbell, Chief Traffic Officer of the Board of Railway Commissioners for Canada, Mr. G.A. Brown, Assistant Chief Traffic Officer of the Railway Commission, and members of his staff, and Mr. W.B. Lanigan who was General Freight Traffic Manager of the Canadian Pacific Railway Company at the time this work was started.



R.H. COATS,
DOMINION STATISTICIAN.

Ottawa, March 18, 1936.

DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
TRANSPORTATION AND PUBLIC UTILITIES BRANCH
OTTAWA

Dominion Statistician, R.H. Coats, LL.D., F.R.S.C., F.S.S.(Hon.).
Chief, Transportation and Public Utilities Branch, G.S. Wrong, B.Sc.

INDEX NUMBERS OF RAILWAY FREIGHT RATES

Railway freight rates are the prices which railways charge for the service performed in transporting freight from place to place. The prices are different for different classes of freight, for different distances, and in different parts of the country; consequently the total number of individual prices or rates is enormous.

There are continuous changes in individual rates and also broad movements up and down, similar to changes in wholesale and retail prices of commodities, but, because of the complexity of railway freight rates, satisfactory measures of these changes are difficult to compute. Because of the difficulties in computing an index with a fixed base and fixed weighting over a number of years, the average revenue per ton mile has been quite generally used to measure the fluctuations in freight rates. The chief weakness in this average as an index number is the influence of large changes in the nature of the freight carried irrespective of changes in the freight rates. This is particularly noticeable in Canada where a large grain harvest tends to lower the average revenue per ton mile because of the relatively low rate charged for grain, the long haul and the large percentage grain is of the total freight carried.

It is necessary to use some index of freight rates when making comparisons of freight rates with prices of commodities or of other services, and in **this report** the Bureau has attempted to compute an index which will not have the inherent weakness of the average revenue per ton mile and which will indicate the relative level of freight rates for various classes of freight and for all rates considered as a whole for a series of years.

The schedules of freight rates, including mileage, class rate scales, general and special commodity rates, are worked out by the railways and filed with the Board of Railway Commissioners which has very broad powers of rate regulation. The Railway Boardifies, adjusts and corrects rates, it protects the public against discriminatory and unreasonable charges and practices and endeavours to keep the rates in the several sections of the country so related to each other as to enable all sections of the country, regardless of geographical location, to enjoy as fully as may be their special economic advantages.

Classification is the initial step in rate construction. The Canadian Freight Classification No. 18, issued July 17, 1929, is the official publication of the several carriers containing the class ratings of all articles and the special rules, governing billing of freight, packing, payment of charges, minimum weights for carload shipments, loading and unloading regulations, mixed carload shipments and other rights and duties of the shipper, consignees and carriers. There are approximately 15,000 articles

listed in the Canadian Freight Classification and in order to reduce the number of rates which must be made the different articles are grouped into ten classes of freight. The Railway Board must approve the classification for it is on the basis of this classification the freight tariffs are issued. The Board may direct the carriers to change the classification of any article or articles and remove them to a lower or higher classification according to its decision providing that goods shall not be taken from a lower to a higher classification without sufficient notice having been given in the Canada Gazette. The carriers are required to give thirty days' notice of any advance in rates and three days' notice of a reduction in rates except in the case of competitive rates which, owing to the exigencies of competition, are urgently required to be brought into immediate effect without previous notice to the Railway Board, and which may be acted upon before filing with the Board. The railway company must forthwith file a tariff containing such rates together with a clear statement of reasons for so acting.

First Class includes commodities and manufactured products of a bulky nature and high value, such as passenger automobiles set up, loose or in packages, carload minimum weight 10,000 lbs. Second Class comprises those commodities which are slightly less bulky or valuable but moving in relatively greater tonnage, such as certain kinds of musical instruments, including pianos and radio receiving sets. Third Class comprises the ordinary merchandise commodities in compact packages of comparatively great weight and cubical measurement moving in less-than-carloads. Fourth Class covers articles of light weight and bulky dimension, fragile in character, of comparatively high value and moving in low minimum carloads. Fifth Class includes general merchandise moving in carload, generally speaking, of the same character that would take third class rate in less-than-carloads. This class covers a substantial tonnage and is the basis upon which the classification is constructed. Sixth Class, as a rule, covers flat car merchandise. Seventh Class includes railway equipment and supplies, Eighth Class includes cereals and cereal products, potatoes and vegetables, Ninth Class is livestock, and Tenth Class covers such products as timber, lumber, coal, stone in the rough, brick, etc. The first six classes may be termed as merchandise while the last four as commodity classes. This classification is the basis for the standard freight class tariffs which specify the maximum mileage rates which may be charged for each class of freight contained in the official Classification. Provision is also made in the classification for two different ratings of many commodities, one on the basis of less-than-carload (L.C.L.) quantities and the other upon carload (C.L.) quantity. When a commodity is shipped on the L.C.L. basis it is given a higher rating and, of course, is charged a higher rate than when it is shipped C.L.

For freight rate purposes Canada is divided into two main divisions, east and west, the line of demarcation being through the head of the Great Lakes. The rates in the eastern division are, on the whole, lower than in the western division, the principal governing factors accounting for the differences being:- water competition, greater density of traffic, and better balanced traffic in the eastern division; the last two factors affect the operating costs.

Standard freight class tariffs specify the maximum mileage rates which may be charged for any one of the ten classes of freight in the Canadian Freight Classification and are the charges used in the absence of special tariffs quoting lower rates. Since most of the traffic moves on lower rates, the standard mileage class rates are not very important in relation to the total volume of traffic handled.

In the freight structure of Canada each railroad has its standard mileage class freight tariffs and, as the geographical limits of the territories are very similar, the

Canadian Pacific Railway tariffs are used as an illustration.

) Eastern Standard Mileage Freight Tariffs.

(a) C.P.R. No. E-1, local mileage freight table No. 1 which applies between stations Sault Ste. Marie, Windsor, Ontario, and east thereof, 2,100 miles.

(b) C.P.R. No. E-1, local mileage freight table No. 2 applies between stations Sudbury, Ontario, and west to Fort William, Ontario (inclusive); also between stations east of Sudbury, Ontario, to and including Fort William, Ontario, and stations Sault Ste. Marie, Windsor, Ontario, and east, 3,000 miles.

(c) C.P.R. No. 34, special mileage freight tariff which applies between C.P.R. stations in the Province of New Brunswick, 300 miles, (The C.N.R. tariffs corresponding to this tariff apply to that section of the country east of Levis and Diamond Junction, Quebec, to the Maritime Provinces, comprising what is designated as the "preferred territory" under the Maritime Freight Rates Act (17-18 Geo. V, C.44).)

) Western Standard Mileage Freight Tariffs.

(a) C.P.R. No. W-1, Section No. 1, "Prairie" Standard applies (local and interchange) between stations in the provinces of Ontario (Port Arthur, Ontario, and west thereof), Manitoba, Saskatchewan, Alberta (Canmore, Alta. and east thereof), and British Columbia (Vancouver's Nest, B.C. and east thereof); also on interchange traffic between stations as defined above and stations east of Port Arthur, Ontario, to Sudbury, Ontario, 2,100 miles.

(b) C.P.R. No. W-1, Section No. 2, "B.C. Lakes" Standard applies locally between ports of call on the Arrow, Shocan, Kootenay and Okanagan Lakes and the Columbia River. These rates do not apply where a rail haul intervenes and the maximum mileage expressed in the tariff is 150 miles. It may be mentioned here that there is no "B.C. Lakes" Standard for the C.N.R. which has only the "Prairie" and "Pacific" Standards in the western division.

(c) C.P.R. No. W-1, Section No. 3, "Pacific" Standard applies (local and interchange) between stations in the provinces of British Columbia and Alberta (Canmore, Alta. and east thereof); also applies on interchange traffic between rail stations and ports of call in British Columbia defined in Section No. 2 and also on interchange traffic between rail stations and ports of call in British Columbia and stations as defined in Section No. 1. The maximum of the mileage scale is 2,200 miles.

The following table shows the rates for a distance of 100 miles throughout the standard mileage territories of the Canadian Pacific Railway.

Classes as per Canadian Freight Classification
(Rates in cents per Hundred Pounds)

Territory	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
"Preferred"	52	46	39	33	26	24	20	22	20	17
Sault Ste. Marie, Windsor and East thereof .	65	58	49	41½	32	29	24	25	24	19½
Sudbury and West to Fort Wm.	86½	72	58	43	34½	30½	24	22	24	19½
"Prairie"	69	57	47	35	32	27	21	23	26	18
"B.C. Lakes"	69	57	47	35	32	27	21	23	26	18
"Pacific"	81	68	54	39	36	30	23	26	30	20

In the division between Sudbury and Fort William the rates are the highest of all eastern rates; the "Prairie" Standard is higher than those of the two most easterly divisions, but lower than the Sudbury and Fort William division. The "B.C. Lakes" Standard mileage rates are the same as the "Prairie" Standard and the "Pacific" Standard mileage rates are the highest of all western rates. The Sudbury and Fort William Standard mileages are higher than the "Pacific" Standard mileage rates for the first four classes and the sixth and seventh classes.

It is worthy to note at this particular point the relation of classes in eastern and western Canada. The fourth class rate of the Sudbury and Fort William, the "Prairie", "B.C. Lakes" and "Pacific" standard mileages is approximately 50 per cent of the first class rate, while second and third classes are approximately $83 \frac{1}{3}$ and $66 \frac{2}{3}$ per cent respectively of the first class rate. In standard mileage tariffs for stations Sault Ste. Marie, Windsor and east thereof and the "Preferred" territory the fifth class is 50 per cent of the first class with second, third and fourth classes approximately $87 \frac{1}{2}$, 75, and $62 \frac{1}{2}$ per cent of the first class. Below the fifth class in eastern Canada and the fourth class in western Canada the rates are scaled down without regularity until the tenth class is reached. This same relativity exists in the "class," "town" and "distributing class" rates which are explained later in this report.

Mileage rates, other than standard mileage rates, are applicable to many commodities. For example, in the case of building materials, like stone, brick, lime, sewer pipe and drain tile, the tariffs in eastern Canada provide for specific mileage rates which are lower than standard mileage or regular class rates.

Class rates are lower than standard mileage class rates and are in force in a great number of class rate territories throughout Canada. Class rates for the most part apply to L.C.L. traffic and some C.L. traffic of the higher grades. It is the most expensive traffic to handle; however, only a relatively small portion of the total tonnage moves upon class rates.

Of the special class tariffs in the east which are lower than the standard mileage maximum, the "town" tariffs are perhaps the most important because of the greater bulk of higher classes of freight moving within the thickly populated centres of Ontario and Quebec. These "town" tariffs have increased until now there are approximately 150 cities and towns in Ontario and Quebec on the Canadian National Railway lines which have "town" tariffs. These "town" tariffs apply in both directions, and as a consequence they help to maintain the whole class rate structure considerably lower than the standard mileage basis.

Another important class rate structure in the east is the system of rates between points west of Montreal and points east of Montreal in the provinces of Quebec, New Brunswick, Nova Scotia and Prince Edward Island. In the matter of rates between Ontario and the Maritime Provinces the St. John rate acts as a blanket for every other place in the province of New Brunswick. Also there is the class rate structure between the territory west of Montreal and that east of Quebec City and Levis, particularly the Maritime Provinces. The basis of the class rate structure between Ontario and the Maritime Provinces is the Toronto to St. John rate. Points west of Toronto take rates which are fixed amounts above the Toronto rates and at the Maritime end St. John is the pivotal point and other groups in the Maritime Provinces bear a fixed relation to the St. John rates. As stated in the foregoing there are three standard mileage tariffs in the territory west of Lake Superior, the two most important being the Prairie Standard between the Head of the Lakes and Canmore and the Crow's Nest on the C.P.R. and Edson, Alberta, on the C.N.R. and the Pacific Standard in effect from the western boundary of

Prairie standard to the Pacific coast. These standard mileages constitute the basis of the western "town" tariffs or what is more commonly known as "distributing class" rates. In the east the rates as quoted in the tariffs apply in both directions between the distributing centre and the point of destination and the origin of the shipment, while in the west they apply only one way or from the distributing centre to the destination of the shipment. Also these "distributing class" rates differ from the "town" tariffs of the east in that the rates are not joint rates and apply only to shipments on the same railway. The most important centres in the west which enjoy these "distributing" rates are in Manitoba Winnipeg, Portage la Prairie and Brandon; in Saskatchewan Regina, Moose Jaw and Saskatoon; in Alberta Calgary, Edmonton, Lethbridge and Medicine Hat; and in British Columbia Nelson, Kamloops and Fernie. Coast points like Vancouver, New Westminster and Victoria are somewhat different from interior points in that they possess the advantages of ocean connections and low rates to other countries of the world with the result that the carriers issue special and competitive tariffs, naming class and commodity rates between these points and other stations in Canada.

(Port Arthur and west thereof): With regard to the class rate structure between Ontario and western Canada, the whole of the territory between and including Montreal to the east and Windsor, Sarnia and Sault Ste Marie on the west and between and including Niagara Falls on the south and Sudbury on the north, is blanketed; consequently the rate between any point in this territory and Fort William or west thereof is the same. The blanketing of this great expanse of territory is a result of the effects of water competition on the Great Lakes. Class rates between Montreal and Western Canada are based on a Montreal Fort William arbitrary plus the local rate between Fort William and point of destination. Similarly from and to points east of Montreal the rate is obtained by adding an arbitrary to the Montreal rate. It is by this procedure that class rates between the east and west are built up. In addition there are class tariffs between Fort William and Port Arthur and west thereof; also from Vancouver and other British Columbia coast points to points east thereof which are based on constructive mileage, 130 miles less than the actual mileage. While the class rate structure is very complex only a relatively small tonnage moves on the class rates.

By far the greatest tonnage of traffic moves on commodity rates. These rates may be general, special or competitive. It is quite probable that approximately 90 per cent of the total traffic moves on commodity rates and in British Columbia the percentage may be as high as 90. Most of this commodity rate traffic is C.L.; the amount of C.L. which moves on commodity rates is very small. In common with class rates, commodity rates may be local, joint or export. Commodity rates are generally put into effect to secure a lower rate for those commodities which move in very large volume. On account of geographical location have to meet the exigencies of competition. Canadian carriers are forced to meet the competition of the United States carriers for commodities for export via Atlantic Sea board points, with the result that Montreal, John and Halifax are made competitive with the eastern sea board points of the United States. Commodity rates, as a whole, have no definite relation to class rates. The distance hauled is not an important factor. The entire commodity rate structure is to be built on the theory of allowing the producing areas of basic commodities to reach their markets upon some equality of terms. Economic demands and competition seem to be the controlling feature of the rates charged. The lumbering, mining, fishing and other industries of British Columbia, the grain, livestock, coal and flour milling of the central Prairie Provinces, the highly developed manufacturing provinces of Ontario, Quebec and the coal, fishing, lumbering, sugar, fruit and vegetable industries of the Maritime Provinces are moved largely on commodity rates.

In recent years, as a result of the high and efficient development of the motor transport aided by a system of surfaced highways, the movement of freight by trucks has increased very rapidly. As class rates are generally based upon distance and they apply more generally on L.C.L. traffic, which is the most expensive traffic to handle, the motor transport has captured a considerable percentage of this traffic. To meet the effect of this motor truck competition the Canadian carriers introduced in May, 1931, special rates. Further on May 1, 1935, the carriers introduced a pick-up and delivery service with no cartage charges in parts of Ontario and Quebec to meet the motor truck competition on L.C.L.

One of the important factors in western rates is the Crow's Nest Pass Agreement of 1897. Under it to authorise a subsidy for a railway through the Crow's Nest Pass (60-61 Vic. C.S.), the Canadian Pacific Railway received a subsidy and in return the company made a reduction in the general rates of certain classes of merchandise westbound from and including Fort William and on all points east of Fort William on the company's railway to all points west of Fort William on the company's main line; also a reduction in the company's rates on grain and flour from all points on its main line, branches and connections west of Fort William to Fort William, Port Arthur and all points east, of three cents per hundred pounds, to take effect one and one-half cents per hundred pounds on or before the first day of September, 1898, and an additional one and one-half cents per hundred pounds on or before the first day of September, 1899.

The foregoing rates were the maximum rates which could be charged under this agreement. However, an agreement executed in 1901 (See Manitoba Statutes 1901, C.39.) between the Manitoba Government and the Canadian Northern Railway Company, known as the "Canadian Northern Railways Agreement" or in short title, the "Manitoba Agreement," had a very definite effect on the Crow's Nest Pass Agreement on grain and flour rates eastbound to Fort William. Under the "Manitoba Agreement" the railway company in consideration of the provincial government's guaranteeing its bonds and giving it a lease of the Northern Pacific and Manitoba Railway, including several lines of railways owned and operated by it, agreed to:-

(a) reductions amounting together to more than four cents per hundred pounds on the tariff rates in force on the date of the said indenture for the carriage of grain from Manitoba to a Lake Superior port, and

(b) reductions amounting together to more than fifteen per cent of the tariff rates in force on the date of the said indenture for the carriage of all other freight from and to points in Manitoba and from and to points in Manitoba to and from Fort William or Port Arthur.

At the time of this agreement the rate on wheat from Winnipeg to Fort William was 14 cents per hundred pounds and by virtue of this "Manitoba Agreement" the rate was reduced by two cents per hundred pounds and a little later a further two cents per hundred pounds, or the total reduction of four cents per hundred pounds. When the Canadian Pacific Railway as a competitor agreed to be bound by this Manitoba scale of rates the Canadian Northern was allowed one cent more so that the grain rate from Winnipeg to Fort William became eleven cents per hundred pounds, or three cents below the maximum rates of the Crow's Nest Pass Agreement. The Canadian Pacific Railway also voluntarily reduced its rates on grain from Alberta and Saskatchewan points to Fort William.

In June, 1916, by its decision in the "Eastern Rates Case" (B.R.C. G.O. 133), the Railway Board ordered that east of, but including, Port Arthur there should be an increase of 2 cents per hundred pounds on first class freight and 1 cent per hundred pounds on fifth class, the rates on the other classes being scaled proportionately as shown in the standard tariffs for mileages covered by any particular movement excepting

through rates to and from the Maritime Provinces and also for the Quebec stations of Canadian National east of Levis. These increases amounted to approximately 5 per cent the rates which had been in effect. The commodity rates were considered separately, no general changes were introduced as was the case with class rates.

On March 15, 1918, on account of the financial exigencies of the railways, the Railway Board considered that a 15 per cent increase requested by the railways should be allowed. However, there was difficulty in applying this increase in western Canada for carriers, through the Western Rates Case in 1914, had already obtained a substantial decrease of a little less than $6\frac{1}{2}$ per cent in the five classes of general merchandise. To increase these rates by a full 15 per cent would make the total average approximately $21\frac{1}{2}$ per cent. The Board, therefore, allowed 15 per cent on the through rate so far as the territory west of Port Arthur was concerned, but on the eastern balance of the through rate the increase was limited to 10 per cent. Conditions in British Columbia and adjacent territory in Alberta, comprising the Pacific District, were different; generally making the rail rates were on a higher basis than the Prairie territory. Consequently, to avoid increasing materially the spread between Pacific and Prairie tariffs, the rates in the Pacific territory were increased, with few exceptions, only 10 per cent. Special commodity rates were provided for particular commodities such as coal, sand, crushed stone and gravel. Further in the west grain was the chief traffic and the Crow's Nest Pass Agreement of 1897 would not permit a general increase of 15 per cent to the Head of the Lakes. However, a flat increase of 2 cents per hundred pounds with a maximum of the Crow's Nest Pass rate was allowed on grain and grain products, which was close to 10 per cent of the average western rate. Rates on carload grain and grain products in the west, other than to the Head of the Lakes and intermediate points, which were held down by the terminal rates and also on the same commodities from Port Arthur and Fort William westward, as well as on carload grain and grain products in eastern Canada, were increased a flat 15 per cent, subject to a maximum increase of 2 cents per hundred pounds on existing rates. Transcontinental class rates were increased 10 per cent, but no increases were allowed in transcontinental commodity rates because they were directly competitive with United States rates. By the increases granted (B.R.C., G.O. No. 213) September 26, 1917, on the great bulk of the traffic in the west, the rates were increased approximately 10 per cent on the average, while the eastern rates in general were increased 15 per cent and became effective March 15, 1918, with the exception of the increased rates on grain and grain products which were made effective June 1, 1918.

The next change in the rate level came later in the same year as a result of the "Adoo Award" which increased the wages of railway employees by substantial amounts. The rates worked out by the Railway Board and put into effect August 12, 1918, by O.C. P.C. 1863, were as follows:

- (a) Territory east of Fort William all class rates were increased 25 per cent and commodity rates according to a definite schedule while the rates on commodities not enumerated were increased 25 per cent.
- (b) In the territory west of Fort William all class rates were increased 25 per cent calculated on the tariffs in force before March 15, 1918, when the 15 per cent increase was put into effect but the increases by the Railway Board since that date were to be cancelled. In other words, in respect of Western Canada, the 15 per cent increase of March 15, 1918, was to be included in the 25 per cent increase of August 12, 1918. Commodity rates were also increased the full 25 per cent calculated on the tariffs in force prior to March 15, 1918.

By virtue of this order rates were established for the first time on a higher scale than the Crow's Nest scale of 1897.

The next change in the rate level occurred on September 13, 1920 (B.R.C., G.O. No. 308), as a result of the "Chicago Award" which was made to offset the increase in the wages of various classes of railway workers in the United States. The changes in the level at this time were:

- (a) Until December 31, 1920, there should be a general increase of 40 per cent in eastern freight rates and 35 per cent in western freight rates.
- (b) Beginning January 1, 1921, these freight rates (a) were reduced to 35 per cent in the east and 30 per cent in the west.

A variation was made in the case of such commodities as coal, which was increased 10 cents per ton on all rates up to 80 cents per ton, 15 cents on all rates 80 cents to \$1.50 per ton, and 20 cents on all rates over \$1.50 per ton. Cordwood and fuel wood were increased 10 per cent and no increase was allowed on milk.

During the year 1921 the carriers made voluntary reductions on grain rates from Fort William and other Lake Ports to Montreal and the Atlantic Seaboard for export and also for domestic consumption in eastern Canada. On livestock a reduction of approximately 25 per cent of the existing rates was made. Reductions were also made on hay in eastern Canada and on lumber from British Columbia to eastern points, and on a number of other commodities.

In July, 1921, a reduction was made in the wages of railway workers approximately 10 per cent and as a result of an investigation by the Board of Railway Commissioners following changes were made effective December 1, 1921:

- (a) In the territory east of and including Port Arthur, Fort William and Westfort freight rates were based upon 25 per cent over rates in effect prior to September 13, 1920.
- (b) In the territory west of and including Port Arthur, Fort William and Westfort freight rates were based upon 20 per cent over rates in effect prior to September 13, 1920.
- (c) On through rates between eastern and western Canada the above named percentages were to apply to eastern and western factors respectively.
- (d) Transcontinental commodity rates were established on a basis of approximately 23 per cent over the rates in effect prior to September 13, 1920.

On July 5, 1922, (B.R.C., G.O. 366) the Crow's Nest Agreement was restored. It had previously been suspended by Parliament in 1919 for a period of three years. By the restoration of this agreement the eastbound rates on grain and flour were restored to the level of 1897. The Board also ordered a reduction of approximately $7\frac{1}{2}$ per cent on basic commodities which still remained $12\frac{1}{2}$ per cent above the basis of September 13, 1920, in western Canada and $17\frac{1}{2}$ per cent in eastern Canada. Rates on coal, other than anthracite and westbound coal from the Head of the Lakes, which had been increased by flat amount were restored to the September 12, 1920, level.

The effect on grain rates of the various orders since the Crow's Nest Pass Agreement in 1897 is illustrated below by the rates on three hauls, viz., from Winnipeg, Regina and Calgary to Fort William.

GRAIN RATES IN CENTS PER 100 POUNDS TO FORT WILLIAM

From	1897	1901	June 1918	August 1918	September 1920	January 1921	December 1921	July 1922-35
Manitoba	14	10	12	14	19	18	17	14
Saskatchewan	20	18	20	24	32.5	31	29	20
Alberta	26	24	26	30	40.5	39	36	26

In 1922 a reduction was made in the Pacific standard mileage tariff. Previous to 1922 for 220 miles in the mountains each mile was counted as the equivalent of two miles in the prairie and beyond that up to the limit of 750 miles (the longest local east and west movement in British Columbia) the mileage was weighted on a somewhat lower but regular basis. Under the Railway Board's judgment in the Western Rates Case of 1914 the basis of one mile Pacific standard equivalent to one and one-half miles Prairie standard was adopted and in 1922 this was further reduced to one mile Pacific standard equivalent to one and one-quarter miles Prairie standard.

A very important reduction was made on grain and flour from the Prairie Provinces to Vancouver for export the latter part of 1923. The rates originally established by the Canadian Pacific Railway on grain and grain products to Vancouver for export were based on the grain rates to Fort William, the basis, roughly (and with some exceptions) being that from its main line and southern branches rates to Fort William were applied to points of corresponding mileage to Vancouver, but with the addition of a constructive mileage for mountain haul. From north main line stations and northern branches of the Canadian Pacific Railway there were established approximately the same rates as the Canadian National Railways apply from their main line stations of equal distance to Port Arthur, which were on a somewhat higher basis than the Canadian Pacific Company's main line scale. These rates were subsequently increased along with the general increases in rates which resulted from the change in conditions brought about by the war and in 1922 reduced by the restoration of the Crow's Nest Pass Agreement. Effective not later than October 22, 1923, the Board (B.R.C., G.O. 384) ordered that the current rates on grain and grain products to Pacific coast ports for export be reduced uniformly 10 per cent. Effective September 15, 1925 (B.R.C. Order No. 36769), the rates on grain and flour from Prairie points to Pacific coast points for export were reduced approximately 10 per cent, or to the same level, mile for mile, as those applying from the Prairies to Fort William and Port Arthur. A further revision was made by the Board (B.R.C., G.O. 448) effective September 12, 1927, whereby:

- (1) The rates on grain and flour from all points on the Canadian Pacific branch lines west of Fort William to Fort William, Port Arthur and Westfort were equalized to the existing Canadian Pacific main line basis of rates of equivalent mileage groupings (the rates governed by the Crow's Nest Pass Agreement not to be exceeded). All other railway companies were required to adjust their rates on grain and flour to conform with the Canadian Pacific Railway rates.
- (2) The rates on grain and flour from Prairie points to Vancouver and Prince Rupert for export were placed on the same basis as the rates to Fort William, but in computing such rates the distance from Calgary to Vancouver, via the Canadian Pacific Railway, was assumed

to be the same as Edmonton to Vancouver via Canadian National Railway, namely 766 miles.

The Maritime Freight Rates Act came into force on July 1, 1927. It reduced:-

- (a) local traffic (all rail) between points on the Eastern lines by 20 per cent,
- (b) all rail westbound traffic from points on the Eastern lines westbound to Canadian points beyond the limits of the Eastern lines at Diamond Junction or Lewis. For example, Fredericton to Montreal, the 20 per cent is based upon the Eastern lines' proportion of the through rate.
- (c) Export traffic from points in the preferred territory via ports within that territory were also reduced by 20 per cent.

For greater clearness, it may be said that the following are not preferred movements:- (1) traffic inward or outward to or from the United States and all-rail from or to points in the United States to or from points on the Eastern lines; (2) traffic moving inward, eastbound from Canada, all rail, such as Toronto to St. John; (3) import traffic to Canada originating overseas, such as Liverpool to Moncton or to Toronto.

The Maritime Freight Rates Act provided that the difference between these reduced rates and the normal rates should be paid by the Dominion Government to the railways; for the period July 1, 1927, to March 31, 1935, the Dominion Government has paid \$19,815,522 to the railways, or an average yearly subsidy of approximately \$2,556,800.

Since the Maritime Freight Rates Act of 1927 there have been very few changes widely affecting the general rate structure. The most general changes that have occurred are the rates issued to offset motor truck competition and the pick up and delivery motor truck rates in parts of Ontario and Quebec, previously mentioned.

Changes of a widely scattered nature are constantly being made and supplemental tariffs affecting existing tariffs are continually being filed with the Board of Railway Commissioners. To measure the effect of these changes the Bureau has compiled index numbers.

The method adopted in computing these index numbers for the mass of freight rates was, first, to select a list of commodities representative of the seventy-six commodity classes for which the railways report tonnages carried each year, second, to select hauls for each of these commodities and, third, to compile the freight rates for the selected hauls for these commodities for a series of years from the tariffs filed with the Board of Railway Commissioners. On the assumption that the list of commodities was a fair sample of all freight carried by the railways, that the selected hauls were representative of the actual movement of these commodities, and that the changes in rates on these would be fairly representative of the changes in rates of all freight, weights were given each series and index numbers computed. The selections of commodities and hauls were made with the aid of various returns collected by the Bureau, railway officials having first hand knowledge of freight movements, and any other source available. Carload commodity rates were used wherever such were in effect. In a number of cases, as a result of commodity rates not being in effect in the earlier years, it was necessary to use the class rates until such time as the lower commodity rate was established. Further quite frequently typical commodity routes and rates have been cancelled and class rates restored as a result of insufficient volume moving to command the lower rate. The raising of a rate as a result of the change from a commodity to a class rate does not, broadly speaking, indicate that the rate level has

generally increased on that particular commodity. It usually indicates that economic conditions have changed and that new routes which are not at all comparable with the former routes have been established; it has been quite difficult over a twenty-year period to establish a continuity of class or commodity routes and rates.

The geometric means of the rates were next compiled for each commodity by years. The geometric mean is the n th root of the product of several factors where " n " is the number of factors and is a value equal to or less than the arithmetical mean.

Consideration of the weighting of the geometric means for each commodity was next considered. All commodities are not of equal importance in the total traffic of the carriers. The Summary of the Monthly Railway Traffic Reports for the Railways of Canada shows the percentage volume of the various commodities carried by the railroads. These percentages reflect the relative importance of one commodity to another and when used as weights are rational in that they represent actual percentages of specific commodities carried by all the railroads of Canada.

Composite indices using the percentage tonnage of each commodity to the total traffic were compiled, using the year 1926 equal to 100 as a base, and a composite index showing the variations in railway freight rates for the period 1913 to 1933 inclusive was computed. The differences when using 1925, 1926 and 1927 data as bases were very slight.

In conclusion it is recognized that in many instances the data upon which to base the selection of commodities and rates were rather meagre and also that the weighting could be adjusted every few years for important changes in freight movements. The sections, however, cover a fairly wide range and the rise and fall of the geometric means weighted as they were by the 1926 percentages of tonnage will probably follow very closely the general trend of all Canadian freight rates when considered as a whole. The chart on page 13 indicates the sharp rise caused by the general increases during the years after the Great War, reaching a peak on September 13, 1920, the general reductions in 1921 and 1922 and the very gradual decline from that date to the end of the year 1933. The table on page 12 shows for each year, 1913-1933, the index numbers of freight rates for each of the five commodity groups and the total.

CANADA
RAILWAY FREIGHT RATE INDEX NUMBERS

Base, 1926 = 100

	Agricultural Products	Animal Products	Mine Products	Forest Products	Manufactures and Miscellaneous	Total
Commodities	10	10	9	1	14	44
Rates	116	128	122	70	180	616
<u>Year</u>						
1913	69.15	63.61	70.19	63.78	56.85	63.80
1914	66.58	63.42	67.81	63.78	56.22	62.57
1915	66.58	63.53	68.78	63.78	55.86	62.61
1916	66.81	64.17	71.63	63.78	56.52	63.41
1917	69.56	66.29	71.67	63.78	58.47	64.99
1918	91.70	85.43	98.48	84.82	81.48	87.63
1919	91.17	85.43	97.64	87.23	81.46	87.73
1920	132.74	116.35	112.04	120.07	116.71	120.34
1921	123.29	107.92	111.45	114.93	111.48	114.47
1922	103.31	101.31	101.72	103.67	102.25	102.54
1923	101.14	100.02	100.70	100.76	102.16	101.22
1924	101.10	100.00	100.55	100.61	99.80	100.38
1925	100.00	100.00	100.28	100.79	99.79	100.10
1926	100.00	100.00	100.00	100.00	100.00	100.00
1927	98.86	98.16	93.92	100.29	99.38	98.39
1928	98.86	98.16	93.85	100.29	99.54	98.43
1929	98.86	98.16	93.75	100.22	99.54	98.40
1930	98.86	98.16	93.24	100.22	99.54	98.32
1931	95.74	98.15	93.11	100.22	99.16	97.42
1932	96.39	98.15	93.01	99.93	97.49	96.97
1933	92.91	98.15	93.01	99.68	96.87	95.87

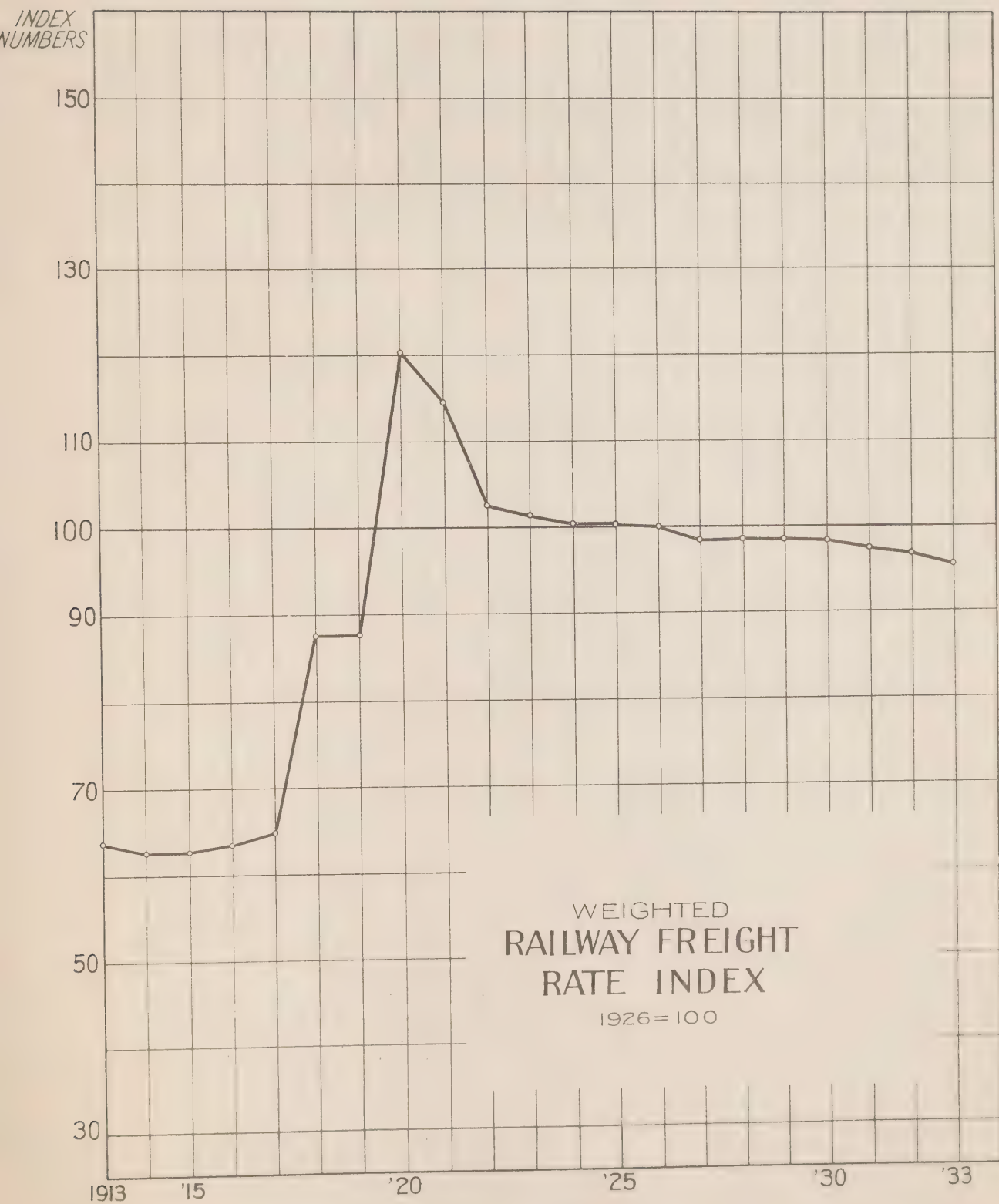


TABLE OF COMMODITIES AND WEIGHTS USED

Agricultural Products	Animal Products	Mine Products	Forest Products	Manufactures and Miscellaneous
Wheat..... 12.65	Horses 0.09	Anthracite Coal..5.26	Lumber, etc.,	Petroleum Products... 2.40
Corn 0.68	Livestock 1.15	Bituminous Coal 13.64	10th class	Sugar 0.60
Oats 1.62	Dressed Meats(fresh) 0.46	Lignite Coal ... 2.50	and	Iron, pig 0.37
Barley 1.17	Dressed Meats(cured)	Coke..... 1.32	commodity 9.78	Iron and Steel
Rye 0.26	and other packing	Ores and Con-		Products 1.47
Flax 0.16	house products.... 0.53	centrates 3.69		Cement, Lime and
Flour 2.21	Eggs 0.15	Sand and Gravel. 4.70		Plaster..... 1.46
Hay and Straw .. 0.88	Butter 0.17	Stone 1.50		Bricks and
Apples 0.28	Cheese..... 0.11	Asphalt 0.23		Artificial Stone .. 0.88
Potatoes 0.63	Wool 0.05	Salt 0.34		Sewer Pipe and
	Hides and Leather .. 0.16			Drain Tile 0.10
				Agricultural
				Implements 0.40
				Automobiles 1.68
				Furniture 0.09
				Fertilizer 0.31
				Pulpwood, Woodpulp
				and Newsprint 7.30
				Fish, (fresh,
				frozen & cured)..... 0.11
				Canned Goods 0.36

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CANADA
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
TRANSPORTATION & PUBLIC UTILITIES BRANCH

INDEX NUMBERS
OF
RAILWAY FREIGHT RATES

1913 - 1936 *dup*



OTTAWA
1938

Price 25 cents

P R E F A C E

This report, the second on the subject of Index Numbers of Freight Rates issued by the Dominion Bureau of Statistics, brings the index up to December 31, 1936, and also includes a brief sketch of the more important Orders of the Board of Railway Commissioners and special Acts of Parliament affecting rates.

The Bureau gratefully acknowledges the co-operation of Mr. W.E. Campbell, Chief Traffic Officer, and Mr. F.R. Harvey, Assistant Traffic Officer, of the Board of Railway Commissioners, in the preparation of this second report which was compiled by R.G. Bangs, B.Sc., A.M.E.I.C., of the staff of the Transportation and Public Utilities Branch of the Bureau.

A handwritten signature in dark ink, appearing to read 'R.H. Coats', with a stylized flourish at the end.

R.H. COATS,
Dominion Statistician.

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DOMINION BUREAU OF STATISTICS
TRANSPORTATION AND PUBLIC UTILITIES BRANCH
OTTAWA

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Chief, Transportation and Public Utilities Branch, G.S. Wrong, B.Sc.

INDEX NUMBERS OF RAILWAY FREIGHT RATES

There is probably no pricing problem more complex than that involved in the sale of transportation of freight. The Canadian Freight Classification No. 18, issued July 17, 1929, lists approximately 7,000 descriptions of traffic, any item of which conceivably may move from any point to any other of the thousands of railroad stations. No simple principle as that of applying the same rate in cents per 100 pounds to all the different commodities and the same rate per mile to all the different hauls would be theoretically or practically accepted. The freight rates are different for different classes of freight, for different distances and in different sections of the Dominion. The filing of new tariffs, or of supplements to existing tariffs, goes on continually. In the year ending December 31, 1935, the Canadian railways issued and filed with the Board of Railway Commissioners 35,979 freight tariffs and supplements thereto, and from November 1, 1904, to December 31, 1935, a total of 1,235,656 freight tariffs and supplements have been filed. The establishment of new industries, new products, new sources of supply, new forms of competition, etc., maintains the rate structure in a constant state of evolution.

The first Dominion Railway Act was passed by Parliament on May 22, 1868, (31 Victoria, chapter 68). A Railway Committee of the Privy Council was appointed to give effect to the Act, which dealt with the powers given railway companies to take and hold lands, to make surveys and plans, structures, tolls, etc. Extended powers were given this Committee over time and discrimination between shippers by the Railway Act of May 22, 1888 (51 Victoria, chapter 29). Beginning with Section 8, the position and powers of the Committee are fully defined. Superseding the Railway Committee of the Privy Council, a board for the regulation of Canadian railways was provided for by the Railway Act of October 24, 1903, (3 Edward VII, chapter 58). To administer the Act, Parliament in February, 1904, appointed a Board of Railway Commissioners of Canada, consisting of three members which was increased to six in 1906. The powers of the Board relate to the location, construction and operation of the railways, but the most important of the powers is that of rate regulation. It also deals with the regulation of telephone, telegraph, and express rates, and tolls charged over international bridges.

Classification of freight is the initial step in rate construction. Section 322 of the Railway Act requires that a freight classification shall be filed with and approved by the Board and such classification dividing the commodities into classes makes the classification complementary to tariffs publishing class rates. In Canada there is one classification schedule applicable throughout the entire country. The preparation of the classification which is highly technical in character is in the hands of a select committee of expert railway officials known as the Classification Committee of the Canadian Freight Association. The Canadian Freight Classification lists the ratings or the classes given to various commodities. Under it there are ten classes of freight termed first class,

second class, etc., up to tenth class, in addition to which ten other classes are fixed by multiples of the first class - used chiefly for goods of a light, bulky and unusual high value. Ratings are provided for movement in both less-than-carloads and carloads. The first four classes are mainly less-than-carloads; the others, fifth to tenth class, are carload ratings. The Board of Railway Commissioners may direct the carriers to change the classification of any article or articles and remove them to a lower or higher classification, providing that goods shall not be taken from a lower to a higher classification without sufficient notice having been given in the Canada Gazette.

The Railway Act of 1919 (R.S. Vol. III 1927, chap. 170, sec. 328) states "the tariffs of tolls which the company shall be authorised to issue under this Act for the carriage of goods between points on the railway shall be divided into three classes;

- (a) the standard freight tariff;
- (b) special freight tariffs; and
- (c) competitive tariffs."

The Board does not initiate rates. The only freight tariffs which upon being filed require specific approval of the Board, in the first instance, are the "standard" freight tariffs. These are merely tariffs of maximum mileage rates beyond which the railways may not charge. Upon any such tariff being filed and approved by the Board the company shall publish the same with a notice of such approval in such form as the Board directs in at least two consecutive weekly issues of the Canada Gazette (Section 330). These "standard" tariffs remain unchanged unless there is a very material advance or decrease in the cost of transportation. The "standard" tariffs of the railways have not been changed since 1922, except in the territory covered by the Maritime Freight Rates Act (17 George V, chapter 44), effective July 1, 1927. They are not uniform throughout the country, six different schedules or scales being in effect - one for the Maritime Provinces, one for the territory east of Sault Ste. Marie and Windsor in Ontario and west of Diamond Junction in Quebec, one for stations between Sudbury and north and west thereof and Port Arthur and Fort William, another applies to points in Ontario west of Fort William, and throughout Manitoba, Saskatchewan and Alberta (Camrose and east thereof on the C.P.R.) and two operate in British Columbia, the "Pacific or Mountain" and the "B.C. Lakes" scales.

In the division between Sudbury and Fort William the rates are the highest of all the eastern rates; the "Prairie" standard is higher than those of the two most easterly divisions but lower than the Sudbury and Fort William division. The "B.C. Lakes" standard mileage rates are the same as the "Prairie" standard and the "Pacific or Mountain" scale is the highest of all western rates.

In the Maritimes and Sault Ste. Marie, Windsor and east thereof, the 4th class is approximately 125 per cent of the 5th class, the 3rd 150 per cent of the 5th class, the 2nd 175 per cent of the 5th class, and the 1st 200 per cent of the 5th class. In the Sudbury and Fort William scale and the three western scales the 3rd class is approximately 133 1/3 per cent of the 4th class, the 2nd 166 2/3 per cent of the 4th class, and the 1st class 200 per cent of the 4th class. Below the 5th and 4th class of the respective groupings mentioned above, the rates are scaled down without regularity until the 10th class is reached.

The bulk of the freight traffic, probably 90 per cent of it, moves under "special" or "competitive" tariffs governed by Sections 328 to 332 of the Railway Act. The carrier themselves, not the Board, decide upon what rates they will publish in these tariffs and, having done so, publish and file them with the Board. "Special" tariffs may be made effective upon three days notice in the case of reductions and thirty days notice in the case of advances. Further under section 344 of the Railway Act and the Rules and Regulations of the Board, the carriers may issue special rate notices between points which

are not competitive to take care of emergency cases where no suitable tariff has been prepared; such as trial shipments of ore - specific shipments not likely to be repeated, and shipments of some traffic beginning to move. In this last case the filing and publication of tariffs must follow immediately.

"Competitive" tariffs like "special" tariffs are for the purpose of permitting the carrier to publish rates lower than the "standard" and are effective to and from points between which two or more transportation lines compete for the movement of traffic or where it is necessary to meet the exigencies of competition of other carriers by land or water between specifically named points. These tariffs may be brought into immediate effect without previous notice to the Board and may be acted upon before filing with the Board, but the company must forthwith file a tariff containing such rates, together with statement of the exigencies and the ground for so acting (Section 332).

A large number of "special" and "competitive" tariffs in the form of class rate tariffs, special or commodity tariffs publishing lower mileage or specific rates on grain and grain products, coal and coke, lumber, building materials, pulp and paper, etc., are in effect and are constantly under revision to meet changes in trade conditions and the competition of water and highway carriers. To meet water and highway carrier competition special seasonal tariffs are in effect, usually from May 1 to November 30, and as a further means of meeting the highway carrier competition a pick-up and delivery service with no cartage charges was introduced on May 1, 1935, in parts of Ontario and Quebec.

The freight rate structure of Canada is very complex and only a brief reference is made here to the fundamental factors used in the making of freight rates. Physical, economic, and competitive characteristics are the dominant considerations in rate-making. Physical factors are creative of higher operating costs in some sections of territory; unproductive territory tends to lower the density of traffic and affect rate structures. Trade conditions arising from new sources of supply and the consequent shift of industry, the presence of water competition on the Great Lakes, the pull of export traffic to the Atlantic and Pacific seaboard, the competition of the United States railroads, the circuitous route of the former Intercolonial Railway in the Maritime Provinces, the effects of the Panama Canal on transcontinental rates are fundamental factors governing the rate structure. The entire commodity rate structure seems to be built on the theory of equalizing the producing areas of basic commodities as regards freight charges. The products of lumbering, mining, fishing and fruit industries of British Columbia, the grain, livestock, coal, and flour milling industries of the Central Prairie Provinces, the highly developed manufacturing industries of the provinces of Ontario and Quebec, and the coal, fishing, lumbering, sugar, fruit and vegetable industries of the Maritime Provinces are moved largely on commodity rates.

During the period under review several important changes were made in freight rates which had marked effects on the freight rate index. Some of these were made at the instigation of the railways, others by orders of the Board of Railway Commissioners, and others directly by Acts of the Dominion Government. The latter rates can be altered only by Act of Parliament and consequently are not affected by changes in economic conditions the same as those under the jurisdiction of the Board of Railway Commissioners.

Under the provisions of the Crow's Nest Pass Agreement (60-61 Victoria, chapter 5) the Governor-in-Council was authorized to grant to the Canadian Pacific Railway Company a subsidy towards the construction of the railway from Lethbridge through the Crow's Nest Pass to Nelson, to the extent of \$11,000 per mile, until the sum of \$3,360,000 in all had been advanced. The Act contains the following provisions:- "(d) that a reduction shall be made in the general rates and tolls of the company as now charged, or as contained in its

present freight tariff, whichever rates are now the lowest, for carloads or otherwise, upon the classes of merchandise hereinafter mentioned, westbound, from and including Fort William and all points east of Fort William on the company's railway, to all points west of Fort William on the company's main line or any line of railway throughout Canada owned or leased by, or operated on account of the company, whether the shipment is by all-rail line or lake and rail, such reduction to be to the extent of the following percentages respectively, namely:-

Upon all green and fresh fruit	33 1/3 per cent;
Coal oil	20 per cent;
Cordage and binder twine	10 per cent;
Agricultural implements of all kinds, set up or in parts	10 per cent;
Iron, including bar, band, Canada galvanized sheet, pipe, pipe fittings, plates, nails, spikes and horseshoes	10 per cent;
All kind of wire	10 per cent;
Paper for building and roofing purposes	10 per cent;
Window glass	10 per cent;
Roofing felt, box and packing	10 per cent;
Paint of all kinds and oils	10 per cent;
Live stock	10 per cent;
Woodenware	10 per cent;
Household furniture	10 per cent;

and that no higher rates than such reduced rates or tolls shall be hereafter charged by the company between the points aforesaid, such reductions to take effect on or before the first day of January, one thousand eight hundred and ninety-eight;

(e) that there shall be a reduction in the company's present rates and tolls on grain and flour from all points on its main line, branches or connections, west of Fort William to Fort William and Port Arthur and all points east, of three cents per 100 hundred pounds to take effect in the following manner:- One and one-half cent per 100 hundred pounds on or before the first day of September, one thousand eight hundred and ninety-eight and an additional one and one-half cent per one hundred pounds, on or before the first day of September one thousand eight hundred and ninety-nine and that no higher rates than such reduced rates or tolls shall be charged after the dates mentioned on such merchandise from the points aforesaid."

While the foregoing rates were the maximum that could be charged under this agreement, the rates for these commodities were generally below the contract rates as a result of the Manitoba Agreement executed in 1901 (See Manitoba Statutes 1901, chapter 39). This agreement between the Manitoba Government and the Canadian Northern Railway Company had a very definite effect on the Crow's Nest Pass Agreement on grain and flour rates eastbound to Fort William. Under the Manitoba Agreement the railway company in consideration of the provincial government's guaranteeing its bonds and giving it a lease of the Northern Pacific and Manitoba Railway, including several lines of railways owned and operated by it, agreed to:-

"(a) reductions amounting together to more than four cents per hundred pounds on the tariff rates in force on the date of the said indenture for the carriage of grain from Manitoba to a Lake Superior port, and

(b) reductions amounting together to more than fifteen per cent of the tariff rates in force on the date of the said indenture for the carriage of all other freight from and to points in Manitoba, and to points in Manitoba to and from Fort William or Port Arthur."

When the reduction was made in the Manitoba rates, pursuant to this agreement of 1901, the Canadian Pacific Railway promptly met the reduced rates in the Manitoba scale and voluntarily made a reduction of seven and one-half per cent in the territory between the Manitoba boundary and Cammore and Crow's Nest. The Canadian Northern Railway Company, after these agreements had been made, received authority from Parliament (Chapter 50 of the Statutes of 1902) to extend its lines beyond the confines of the Province of Manitoba and therefore placed itself in the position of having to adopt the voluntary reduction of seven and one-half per cent made by the Canadian Pacific Railway. The different scales of rates were thereby in effect in the West at that time.

In 1909 the Board of Trade of the City of Regina applied to the Board for a reduction in the rates on classes one to ten inclusive, from the head of the lakes to Regina; and pointed out that the rates to Winnipeg and other points in Manitoba were on a lower basis. It was alleged that this difference in basis constituted a discrimination against Regina as a wholesale distributing centre. The application was supported at the hearing by the Board of Trade of Moose Jaw. The decision of the Board of Railway Commissioners was to the effect that the special class freight tariffs of the Canadian Northern Railway Company and the Canadian Pacific Railway between Fort Arthur and Fort William and points west thereof unjustly discriminated in favour of Winnipeg and other points in the Province of Manitoba to the prejudice and disadvantage of Regina and Moose Jaw and other points west of that province and that the companies should be required to reduce their rates so as to remove this discrimination by publishing and filing new tariffs, to take effect not later than April 1, 1911. Upon the application of the railway companies, leave to appeal to the Supreme Court of Canada from the Order of the Board on this matter was granted. The Board's judgment was affirmed in nearly all points and the reduced rates were made effective April 1, 1912.

Between points in the provinces of Saskatchewan and Alberta and points in Manitoba and Ontario, Fort Arthur and west, the Saskatchewan scale (C.P.R.-C.R.C. No. W. 1443) was in effect. For the purpose of calculating the through mileage to western points in Saskatchewan and Alberta (east of Cammore) it had been the practice of the railways to use a "constructive" or "assumed" mileage of 290 miles instead of the actual distance of 419 miles between Winnipeg and Fort William, plus the actual mileage west of Winnipeg. The essence of the "constructive" mileage is that the mileage from Fort William to Winnipeg being 419 miles, there is a concession of 129 miles on the movement of traffic outward. The Saskatchewan scale, however, being higher than the Manitoba scale, the mileage shrinkage to points in Saskatchewan and parts of Alberta was less because the rates for 290 miles in the Manitoba scale (C.P.R.-C.R.C. No. W. 1735) were those for 250 miles in the Saskatchewan scale (C.P.R.-C.R.C. No. W. 1443).

In 1911 the Western Rates Case was initiated by the passing of a resolution by the Winnipeg Board of Trade and similar organizations in a number of distributing centres, asking that the disparity of rates between eastern and western Canada should be removed. Along with this complaint there was joined a previous complaint from the Board of Trade of Vancouver, asking for the removal of the differential scale on which the rates from Vancouver to points in the Prairie Provinces were predicated.

A very extensive investigation was made by the Board of Railway Commissioners and in May 1914 judgment was rendered. The Board found good and sufficient reasons for the higher rates in the eastern sections of Canada. In their opinion there was no doubt that the lower rates in Eastern Canada had been held down by the influence of water competition and a real and effective railway competition afforded by such United States railroads as the Michigan Central, Eriech, and Pere Marquette, operating through Southern Ontario. While a greater diversity of traffic, better traffic conditions and a greater density of traffic existed in the East, these advantages were more than offset by the longer haul and lower terminal charges of the West. The Board, however, ordered that the three Prairie Provinces be brought under one scale of "standard" rates based upon the "Manitoba" scale of 1901 which was about 15 per cent below the C.P.R. "Standard" tariff in effect

prior to the Crow's Nest Pass Agreement. Also a reduction of 15 per cent was made in the distributing class tariffs from the various distributing centres throughout the three Prairie Provinces. In the making of special class rates between the head of the lakes and points west thereof, the rates to and from Winnipeg were to be no greater than those of the "Prairie" standard tariff for 290 miles and that to and from points beyond Winnipeg within "Prairie" territory the maximum first class rates were to be those of the "Prairie" standard tariffs for the through mileage, made up of the actual distance beyond Winnipeg added to the "constructive" or "assumed" mileage of 290 miles east of Winnipeg. As to British Columbia the "Pacific" or "Mountain" scale of rates already referred to was reduced from the basis of two miles of the "Prairie" scale to one for the "Pacific", to one and one-half miles "Prairie" scale to one of the "Pacific" scale. These provisions of the Western Rates Case became effective September 1, 1914.

In 1915 in the matter of the application, commonly referred to as the "Eastern Rates Case", of the Canadian Freight Association on behalf of the railway companies operating in Canada east of Port Arthur, Ontario, the railways asked for an increase in rates on general traffic carried under the Freight Classification which was lower than the "standard" tariffs and subject to the regulation of the Board. The railway companies in substantiation of their claim showed the great increases which had been made in salaries and wages and other elements of operating costs since 1907 and the resultant decreases in net operating income. The Board of Railway Commissioners issued its decision in June, 1915 (B.R.C. G.O. 133) which ordered, with a few exceptions, the east of, but including Port Arthur, there should be an increase of two cents per hundred pounds on first class freight and one cent per one hundred pounds on fifth class, the rates on the other classes being scaled proportionately as shown in the "standard" tariffs for mileages covered by any particular movement, excepting the through rates to and from the Maritime Provinces and also for the Quebec stations of the Canadian National east of Levis. These increases amounted to approximately five per cent of the rates then in effect. In dealing with the numerous commodity items of the application each item of the application was considered on its merits and no general increases were introduced as was the case with class rates. Specific increases on commodities were allowed as set out in the judgment.

By 1917 the high operating expenses of the railways necessitated the companies making application to the Board for a general increase of fifteen per cent in the level of freight rates. There were several barriers to the granting of the full request of carriers. One of these was the Crow's Nest Pass Agreement fixing the upper limits of certain rates west of Fort William as previously explained. These rates being fixed by an Act of the Dominion Parliament over-riding the Railway Act (Sec. 3), could be increased only by another Act of Parliament.

The Act of the Legislature of Manitoba (Manitoba statutes, 1901, chapter 39) limiting tolls to be charged over lines of the Canadian Northern Railway System within that province is ultra vires as regards the Canadian Northern Railway Company, a Dominion corporation, and as regards subsidiary companies incorporated by the province and subsequently declared to be a work for the general advantage of Canada (1 Edward VII chapter 53, Sec. 3), so that the Board's jurisdiction under the Railway Act as to toll is not limited or affected by the Manitoba Agreement.

In Eastern Canada influences which tended to prevent the full increases becoming effective were the competition of waterways and United States railroads.

On December 26, 1917, the Board issued General Order 213 which granted increases averaging approximately ten per cent on most of the traffic in the West and fifteen per cent in the East. With regard to through rates the Board allowed fifteen per cent on the through rate so far as the territory west of Port Arthur was concerned but on the

eastern portion of the through rate the increase was limited to ten per cent. Conditions in British Columbia and adjacent territory in Alberta comprising the Pacific territory were different; generally speaking, the rail rates were on a higher basis than the Prairie territory and in order to avoid increasing materially the spread between Pacific and Prairie tariffs the rates in the Pacific territory were increased, with a few exceptions, only ten per cent. In the west grain was the chief traffic and, as previously mentioned, the Crow's Nest Pass Agreement would not permit a general increase of fifteen per cent to the head of the lakes. However, a flat increase of two cents per one hundred pounds with a maximum of the Crow's Nest Pass rate was allowed on grain and grain products, which was close to ten per cent of the average western rate. Rates on carload grain and grain products in the west, other than to the head of the lakes and to intermediate points, which were held down by the terminal rates, and also on the same commodities from Port Arthur and Fort William eastward, as well as on carload grain and grain products in eastern Canada, were advanced a flat fifteen per cent, subject to a maximum increase of two cents per one hundred pounds over existing rates. Transcontinental class rates were increased ten per cent, but no increases were allowed in transcontinental commodity rates because they were directly competitive with United States rates. Special commodity rates were provided for coal and coke which were increased fifteen cents per ton east and west; common clay, sand, gravel and crushed stone were increased not more than five cents per ton east and west, and lumber by varying amounts which would nearly approximate an increase of fifteen per cent. The increased rates became effective on March 15, 1918, with the exception of the increased rates on grain and grain products to the head of the lakes which were made effective June 1, 1918.

The next change in the general rate level came later in the year as a result of the "McAdoo Award" in the United States which increased the wages of railway employees by substantial amounts. The rates worked out by the Board of Railway Commissioners and put into effect August 12, 1918, by Order-in-Council No. P.C. 1863, were as follows:

(a) Territory east of Fort William,- all class rates were increased twenty-five per cent and commodity rates on a specified list of articles, in carloads, were increased according to a definite schedule while the rates on commodities not enumerated were increased twenty-five per cent.

(b) Territory west of Fort William,- all class rates were increased twenty-five per cent calculated on the tariffs in force prior to March 15, 1918; the increases since allowed by the Board of Railway Commissioners to be disallowed. Commodity rates were increased in some cases by definite amounts over the rates in effect on March 15, 1918, while in other cases definite increases were made in the rates in force prior to March 15, 1918. Commodities not definitely enumerated were increased twenty-five per cent, calculated on the tariff in force prior to March 15, 1918, and the increases since authorized by the Board of Railway Commissioners were cancelled.

These increases allowed by the Board of Railway Commissioners affected the Crow's Nest Pass Agreement, and the Government by Order-in-Council P.C. 1863, gave authority for its suspension for a period of three years, which action was later confirmed by Parliament in an amendment to the Railway Act of 1919 (9-10 George V, chap. 68, section 325). By virtue of the increases allowed in August 1918, rates governed by the Crow's Nest Pass Agreement were established for the first time on a higher level than provided by the Agreement in 1897.

In July, 1920, as a result of the "Chicago Award" the wages of railroad workers were materially increased in the United States. Corresponding increases were demanded by employees of Canadian railways and to meet these higher rates of wages the Railway Association of Canada on behalf of the railway companies, members thereof, and of all

other railway companies under the jurisdiction of the Board, made applications for a general advance in existing freight rates of forty per cent. The Board gave its decision, effective September 13, under General Order No. 306, allowing a general increase of forty per cent in eastern freight rates and thirty-five per cent in western freight rates, effective until December 31, 1920. Commencing the first day of January following, these percentages on freight were reduced to thirty-five per cent in eastern territory and to thirty per cent in western territory. The percentages of increases in the rates east and west of Port Arthur were applied to the east and west factors respectively of through rates between the east and the west, excepting transcontinental commodity rates.

Exceptions to the general increases were coal, which received from ten to twenty cents per ton increase, wood and fuel wood limited to ten per cent increase, and milk on which no increase was allowed. Transcontinental commodity rates were advanced.

The Board's jurisdiction for the granting of these increases on certain lines of railway in Western Canada depended entirely upon the amendment to section 52 of the Railway Act, 1910, which expired on July 6, 1922, and the rates so established could not extend beyond that date unless authorized by Parliament.

During the year 1921 the carriers made voluntary reductions on grain rates from Fort William and Bay Ports to Montreal and the Atlantic Seaboard for export and also for domestic consumption in Eastern Canada. On livestock a reduction of approximately twenty-five per cent was made. Reductions were also made on hay in Eastern Canada and in Western Canada reductions were made on lumber, miller products, dressed meats and packing house products, and wool and hides from western to eastern points.

In July 1921 a reduction was made in the wages of railway workers, approximating ten per cent and as a result of an investigation by the Board of Railway Commissioners the following changes were made effective December 1, 1921 (G.O. No. 350):- "(a) in the territory east of and including Port Arthur, Fort William and Westfort, freight rates were based upon twenty-five per cent over the rates in effect prior to September 13, 1920; (b) in the territory west of and including Port Arthur, Fort William and Westfort, freight rates were based upon twenty per cent over rates in effect prior to September 13, 1920; (c) on through rates between Eastern and Western Canada the above named percentages were to apply to eastern and western factors respectively; (d) transcontinental commodity rates were established on a basis of approximately twenty-three per cent over the rates in effect prior to September 13, 1920; (e) in the cases where the reductions already voluntarily granted by the railroads have not amounted to ten per cent they were reduced to that point and where the reductions already voluntarily granted by the railroads in 1921 exceeded ten per cent they were left as existing."

No reductions were made on crushed stone, sand and gravel, and milk which received no increase by General Order No. 306 in 1920. There also was no reduction allowed in the rates on coal or in export rates on commodities and all increases on fire wood made September 13, 1920, were removed.

In March 1922 Parliament appointed a Special Committee of the House to inquire into the question as to whether the suspension of the Crow's Nest Pass Agreement should be continued after July 6, 1922. The report of the Committee was enacted in Bill No. 20 which in effect provided for the suspension of the Crow's Nest Pass Agreement for a further period of one year upon all rates and schedules mentioned therein with the exception of grain and flour eastbound, which after July 6, 1922, were to be restored to the level of the Statutes of 1897. The effect on grain rates of the various orders since the Crow's Nest Pass Agreement in 1897 is illustrated in the following table by the rates on three hauls, viz., from Winnipeg, Regina and Calgary to Fort William.

Grain Rates in cents per 100 pounds to Fort William

	1897	1901	June 1918	August 1918	September 1920	January 1921	December 1921	July 1922-36
Manitoba	14	10	12	14	19	18	17	14
Ontario	20	18	20	24	32.5	31	29	20
Saskatchewan	26	24	26	30	40.5	39	36	26

Shortly after the issue of the General Order No. 308 providing for the general increases known as the thirty-five and forty per cent case, effective September 13, 1920, various bodies, among them the Province of Manitoba, appealed to the Privy Council asking that the said order be rescinded for various reasons set forth by the appellants. The matter was heard by the Privy Council and on October 6 the appeal was dismissed with a recommendation "that as conditions have probably changed materially in recent years tending more and more to make equalization practicable, an inquiry by the Board directed to be held at the earliest date with a view of the establishment of rates tending to the utmost extent possible, the above requirement as to equalization."

Soon after the hearings commenced, applications were made by representatives of the Maritime Provinces alleging that they were unfairly treated in regard to the arbitrariness of Montreal; the province of British Columbia asked for the elimination of the "Pacific" scale of rates and that the "Prairie" scale be extended through to the Pacific coast; the Lumber Association of Canada asked for a reduction in rates on lumber products; the Board of Trade of Sault Ste. Marie and scores of other municipalities and corporations forwarded applications asking for a reduction of rates generally or of rates in which they were respectively interested. Hearings were held in all parts of Canada during 1921 and 1922 and on June 30, 1922, General Order of the Board No. 366 ordered the railways to file tariffs effective the first day of August, 1922, providing for the following reductions:

"(a) on the articles, other than grain and flour, hereinbefore referred to as basic commodities, namely - forest products, building material, brick, cement, lime and plaster, shoes, fertilizers (other than chemicals), ores, pig iron, blooms, billets, wire rods, scrap iron, a decrease of seven and one-half per cent from the increase given by General Order No. 308 and any other orders affecting the said commodities, issued since that date, which will hereafter leave the increase granted by the said General Order No. 308 in Western Canada at twelve and one-half per cent and in Eastern Canada at fifteen and one-half per cent; the term "forest products" as set out in such list to be defined as follows:

In the territory east of Port Arthur, Ontario, in accordance with the list of commodities shown in C.P.R. tariff C.R.C. No. E 3618, as taking rate basis "A"; in the tariffs from British Columbia to prairie points on the commodities taking Group A and Group B rates as shown in C.P.R. tariff C.R.C. No. W 2573; and from stations in Alberta and British Columbia to stations in Eastern Canada in accordance with the Canadian Freight Association tariff C.R.C. No. 30; also on pulpwood west of Port Arthur, Ontario. In cases where reductions heretofore granted or ordered upon these commodities have not amounted to seven and one-half per cent as above described, they shall be reduced to that point and where they exceed seven and one-half per cent they will remain as they are at present. These reductions are made upon the same basis in both Eastern and Western Canada with the object of preserving the same spread between these territories as was provided by General Order No. 308.

"(b) on coal other than anthracite and coal from the head of the lakes westward, all increases provided for by General Order No. 308 to be rescinded;

"(c) on commodities moving under class and commodity rates between points east of Montreal and points west of Port Arthur and Fort William the establishment of arbitraries as provided for herein;

"(d) in the territory between North Bay and Sault Ste. Marie Schedule A rates to be applied;

"(e) "Pacific Standard" rates to be reduced from the basis of one and one-half miles of the "Prairie" scale to one for the "Pacific", to one and one-quarter miles "Prairie" scale to one of the "Pacific" scale."

Further as a result of conferences with the Canadian Pacific and Canadian National railways, the railway companies voluntarily made a general reduction in export rates on grain and grain products between Prairie points and Pacific coast points of twenty per cent, effective August 1, 1922.

In 1923 the subject of export grain rates from points in the Prairie Provinces to Vancouver and other British Columbia coast points was referred to the Board for immediate determination and after fully considering the matter the Board under General Order No. 384, dated October 10, 1923, stated that the existing rates on grain and grain products to Pacific coast ports for export should be reduced uniformly ten per cent and that new tariffs should be filed not later than October 22, 1923.

The increases in Crow's Nest Pass rates made in 1918 under Order in Council No. P.C. 1863, previously mentioned, expired on July 6, 1924, and the Canadian Pacific Railway filed tariffs effective July 7, 1924, confirming the rates with the increases removed to and from points which had been on the Company's lines in 1897. The Canadian National Railway also filed tariffs meeting the Canadian Pacific Railway rates at competing points. These tariffs resulted in complaints to the Board of Railway Commissioners of discrimination and unfair treatment from many points to which the Canadian Pacific Railway line had been extended subsequent to 1897. An order of the Board dated October 14, 1924, disallowed these tariffs, the Board holding that it was not bound in the administration of the Railway Act by the terms of the Crow's Nest Pass Agreement. This decision of the Board was appealed to the Supreme Court of Canada and that court held that the Board had no jurisdiction to authorize rates in excess of the maximum rates of the Crow's Nest Pass Agreement and held that under existing legislation the Crow's Nest Pass rates were limited to west-bound traffic originating at Fort William and points east thereof for points which were on the Canadian Pacific railway at the time the agreement was made.

To remedy this situation the Railway Act was amended (15-16 George V, chap. 52, June 27, 1925), cancelling the provisions of the Crow's Nest Pass Agreement in respect to all commodities except grain and flour east-bound and extended the provisions on grain and flour to include traffic from all points on all lines of railway west of Fort William to Fort William or Port Arthur over all lines now or hereafter constructed by any company subject to the jurisdiction of Parliament. This amendment was covered by the Board's General Orders 419 and 420 of July 8, 1925.

At the time of the Crow's Nest Pass Agreement there were the following branch lines upon which grain was carried, namely: the Prince Albert Branch - Regina to Prince Albert in Saskatchewan, the connecting line between Calgary and Edmonton in Alberta and two branches in Manitoba, namely: the Manitoba Northwestern and the Manitoba Southwestern. In the hearing of the province of British Columbia vs. Canadian Freight Association it

as held that the extension (15-16 George V, chapter 52) of the rates prescribed by the Crow's Nest Pass Agreement of 1897 to grain eastbound to Fort William from any and all points west thereof had brought about or increased an inequality as between eastbound and westbound traffic which placed western ports under a serious disadvantage.

The Board's Order No. 36769 issued on September 2, 1925, ordered that the Canadian Pacific and Canadian National Railways file tariffs effective not later than September 15, 1925, reducing the rates on grain and flour to Pacific ports for export to the same rates, proportioned to distance as such grain and flour would carry if moving eastward for export. From Calgary to Vancouver is a distance of 642 miles. From Edmonton to Vancouver is 766 miles and the Canadian Pacific Railway Company in detailing its schedule, in compliance of this order had named its rate upon the basis of 766 miles, the distance from Edmonton to Vancouver instead of calculating the same upon its own distance of 642 miles.

In the inquiry arising from the Order-in-Council P.C. No. 836 of June 5, 1925, requiring the Board of Railway Commissioners for Canada to make a general inquiry into the rate structure of Canada, an application to rescind the Board's Order No. 36769 was made by the railways and also the provinces of Saskatchewan and Alberta made representations to have the Canadian Pacific Railway directed to compute its rates on its own actual mileage instead of the Canadian National mileage referred to above. Under General Order No. 448, dated August 26, 1927, the Board ruled as follows, "(a) that the rates on grain and flour from all points on Canadian Pacific branch lines west of Fort William to Fort William, Port Arthur and Westfort be equalized to the present Canadian Pacific main line basis of rates of equivalent mileage groupings (the rates governed by the Crow's Nest Pass Agreement not to be exceeded); that the Canadian Pacific Railway Company publish rates in accordance with the above direction and that all other railway companies adjust their rates on grain and flour to Fort William, Port Arthur, Westfort and Armstrong to the rates so put into effect by the Canadian Pacific Railway, such changes to become effective on the twelfth day of September 1927; (b) that the rates on grain and flour from prairie points to Vancouver and Prince Rupert for export shall be on the same basis as the rates to Fort William, but, in computing such rates, the distance from Calgary to Vancouver via the Canadian Pacific Railway shall be assumed to be the same as from Edmonton to Vancouver via the Canadian National Railway, namely, 766 miles." Also included in this Order, all rates on grain from Bay Ports as well as all traffic from Toronto and points west thereof for export, to Quebec were reduced to the same basis as the export rates in effect to Montreal and in the West the distributing tariffs set out in the Western Rates Case were extended to apply to the Canadian National Railway.

The Maritime Freight Rates Act (17-18 George V, chapter 44) came into force July 1, 1927. Previous to the absorption of the Intercolonial Railway into the Canadian National Railway System, rates were on a relatively low basis. As a result of the amalgamation many of the rates were adjusted to bring them more in conformity with those in effect in Quebec and Ontario with the result a strong appeal was made by the Maritime Provinces for the restoration of the rate basis which they had enjoyed prior to 1919, as well as the adjustment of other matters pertaining to the agreement by which they became part of Confederation in 1867. The whole matter was referred by Parliament in April, 1926, to a Royal Commission. Upon this report in September 1926 the Maritime Freight Rates Act was enacted and assented to April 14, 1927, by Parliament. The Act provided that the freight rates within the territory east of Diamond Junction and Levis, Quebec, should be reduced twenty per cent between points within that preferred territory and on traffic moving westward from points within the preferred territory to all points west of Diamond Junction the twenty per cent reduction was to be based upon the Eastern rates' proportion of the through rate. Export rates from points within the preferred territory via ports within the territory were also reduced by twenty per cent. The reduction was not to apply, however, to import traffic, eastbound traffic into the select

territory from points in Canada west of Diamond Junction and traffic to and from points in the United States. The Maritime Freight Rates Act provided that the difference between these reduced rates and the normal rates should be paid by the Dominion Government to the railways. For the period July 1, 1927, to March 31, 1937, the Dominion Government has paid \$24,669,745 to the railways or an average yearly subsidy of approximately \$2,530,000.

From the above descriptions of the principal changes in the rates during this period (1913-1936) some of the difficulties in compiling an index of freight rates are apparent. The average revenue per ton mile, computed by dividing the total revenue from all freight by the total revenue freight ton miles, is sometimes used as an index, but where the relative volumes of low class and high class freight fluctuate widely from year to year it is not a very good index of rates.

In 1929 the average revenue per ton mile for Canadian railways was 1.099 cents and in 1932 it decreased to 0.937 cent, or by 16 per cent. This decrease was due partially to decreases in freight rates but the main factor was a large increase in the volume of grain carried on which the ton mile rate is about half of the average for all freight. In 1929 grain constituted 12.6 per cent of the total tonnage carried and in 1932 it rose to 20.6 per cent. Because of the long distance most of the grain is carried the ton miles would be even a greater percentage of the total and consequently the effect on the average revenue per ton mile would be greater than indicated by the tonnage data.

The method adopted by the Bureau in compiling a series of freight rate index numbers for its first report, issued in 1939, was, first, to select a list of commodities representative of the seventy-six commodity classes for which the railways report tonnages carried each year; second, to select hauls for each of these commodities; and, third, to compile the freight rates for the selected hauls for these commodities for a series of years from the tariffs filed with the Board of Railway Commissioners. On the assumption that the list of commodities was a fair sample of all freight carried by the railways, that the selected hauls were representative of the actual movement of these commodities, and that the changes in rates on these would be fairly representative of the changes in rates of all freight, weights were given each series and index numbers computed. The selections of commodities and hauls were made with the aid of various returns collected by the Bureau, railway officials having first hand knowledge of freight movements, and any other source available. Carload commodity rates were used wherever such were in effect. In a number of cases, as a result of commodity rates not being in effect in the earlier years, it was necessary to use the class rates until such time as the lower commodity rate was established. Further, quite frequently typical commodity routes and rates have been cancelled and class rates restored as a result of insufficient volume moving to command the lower rate. The raising of a rate as a result of the change from a commodity to a class rate does not, broadly speaking, indicate that the rate level has been generally increased on that particular commodity. It usually indicates that economic conditions have changed and that new routes have been established; it has been quite difficult over a twenty-year period to establish a continuity of class or commodity routes and rates.

The rates for the various selected hauls for each commodity were combined by taking the geometric mean of these rates. The geometric mean is the "nth" root of the product of "n" factors and is less than the arithmetic mean of the same factors. The next step was to combine these geometric means representing the freight rates for each commodity. This was done by taking the weighted arithmetic mean. The weights used were the tonnages reported by the railways for 1926 and index numbers for the five commodity groups, "Agricultural Products", "Animal Products", "Mine Products", "Forest Products", and "Manufactures and Miscellaneous" and for the total of all freight were computed using the 1926 data as equal to 100 as a base.

In this second report the data have been brought up to the end of 1936 and certain improvements have been made. The number of commodities has been increased to 48, a better distribution has been made, and the indexes have been computed to coincide approximately with the dates of the more important sectional and general rate changes. An important improvement has been the weighting of the selected hauls for grain and coal in the agricultural and mine products groups.

Unquestionably all hauls should be weighted so that changes in rates for hauls with heavy traffic would have a greater influence on the group index than changes in rates for hauls with light traffic. The difficulty has been to secure data on the volume of traffic moving over the various routes. From the Bureau's reports of production and distribution of grain and coal, however, sufficient data were available to compute fairly satisfactory weights for the principal movements of these commodities.

Rates on grain in certain sections of the country are not under the jurisdiction of the Board of Railway Commissioners and such rates have trends that differ somewhat from rates under the jurisdiction of the Board. Consequently a proper weighting or selection of routes for grain was more important than for other commodities. These exceptions are the rates on grain in the West controlled by the Crow's Nest Pass agreement. Also, the rates on coal from the Maritime Provinces were reduced by an Act of Parliament, as previously explained, giving them a different trend from rates on coal from other points.

The effect of the weighting of these two commodities which move in greater volume than other commodities and of the improvements of increasing the number of commodities and hauls has been to raise the general index from 5 to 7 points for the period 1913 to September, 1920, and to lower it slightly for 1921 and 1922. From 1923 to 1933 there was very little change from the index numbers computed in the first report. The trend since 1922 has been fairly steadily downward although the curve shown on page 15 has flattened out for the last two years. The chart indicates the sharp rise caused by the general increases during and after the World War, reaching a peak on September 13, 1920, and the almost equally sharp decline in 1921 and 1922, due to the general reductions.

The table on page 14 shows the index numbers of the freight rates for each of the five groups and the total.

C A N A D A

REVISED FREIGHT RATE INDEX NUMBERS

	Agricultural Products	Animal Products	Mine Products	Forest Products	Manufactures and Miscellaneous	Total
Commodities	10	9	9	4	16	48
Rates	112	92	88	49	159	500
<u>Date</u>						
Jan. 1, 1913	84.89	65.41	64.02	68.85	60.43	67.8
1/ Sept. 1, 1914	83.59	65.76	64.10	66.11	60.80	67.4
Dec. 31, 1915	83.59	65.79	61.61	65.35	64.17	68.2
2/ Dec. 1, 1916	84.38	67.43	63.26	65.94	65.84	69.6
Dec. 31, 1917	85.70	68.26	71.92	67.31	62.61	70.4
3/ Mar. 15, 1918	94.54	77.78	81.73	77.71	71.18	79.5
4/ Aug. 12, 1918	110.61	89.88	97.01	89.05	87.62	94.8
Dec. 31, 1919	110.61	89.88	97.01	92.19	87.28	95.0
5/ Sept. 13, 1920	145.62	123.24	113.82	123.41	119.33	124.8
6/ Jan. 1, 1921	143.67	116.31	111.90	117.53	115.48	121.3
7/ Dec. 1, 1921	130.42	105.37	110.00	110.44	106.77	112.9
8/ Aug. 1, 1922	103.25	102.04	103.01	104.27	102.44	102.8
Dec. 31, 1923	101.21	99.64	100.34	99.82	102.45	101.2
Dec. 31, 1924	101.18	99.59	100.34	100.13	100.07	100.3
Dec. 31, 1925	100.14	99.61	100.37	100.13	99.90	100.0
Dec. 31, 1926	100.00	100.00	100.00	100.00	100.00	100.0
9/ July 1, 1927	99.11	100.00	98.64	96.95	99.60	99.0
Dec. 31, 1928	99.11	99.19	97.94	96.95	99.60	98.8
Dec. 31, 1929	98.66	99.19	97.12	96.95	98.95	98.3
Dec. 31, 1930	98.66	98.97	95.91	96.95	98.96	98.1
Dec. 31, 1931	97.59	98.67	95.80	96.95	98.74	97.7
Dec. 31, 1932	97.86	99.63	95.72	96.90	97.44	97.3
Dec. 31, 1933	97.04	99.15	95.11	96.90	96.85	96.7
Dec. 31, 1934	96.27	99.15	93.87	96.90	94.29	95.3
Dec. 31, 1935	95.90	98.22	95.27	96.10	94.23	95.3
Dec. 31, 1936	94.68	98.22	95.27	95.11	93.89	94.7

- 1/ Western Rates Case.
- 2/ Eastern Rates Case.
- 3/ Fifteen per cent Case.
- 4/ Twenty-five per cent Case.
- 5/ Forty per cent Case.

- 6/ Five per cent Reduction.
- 7/ Ten per cent Reduction.
- 8/ General Freight Rate Investigation.
- 9/ Maritime Freight Rates Act.

WEIGHTED RAILWAY FREIGHT RATE INDEX

1926=100

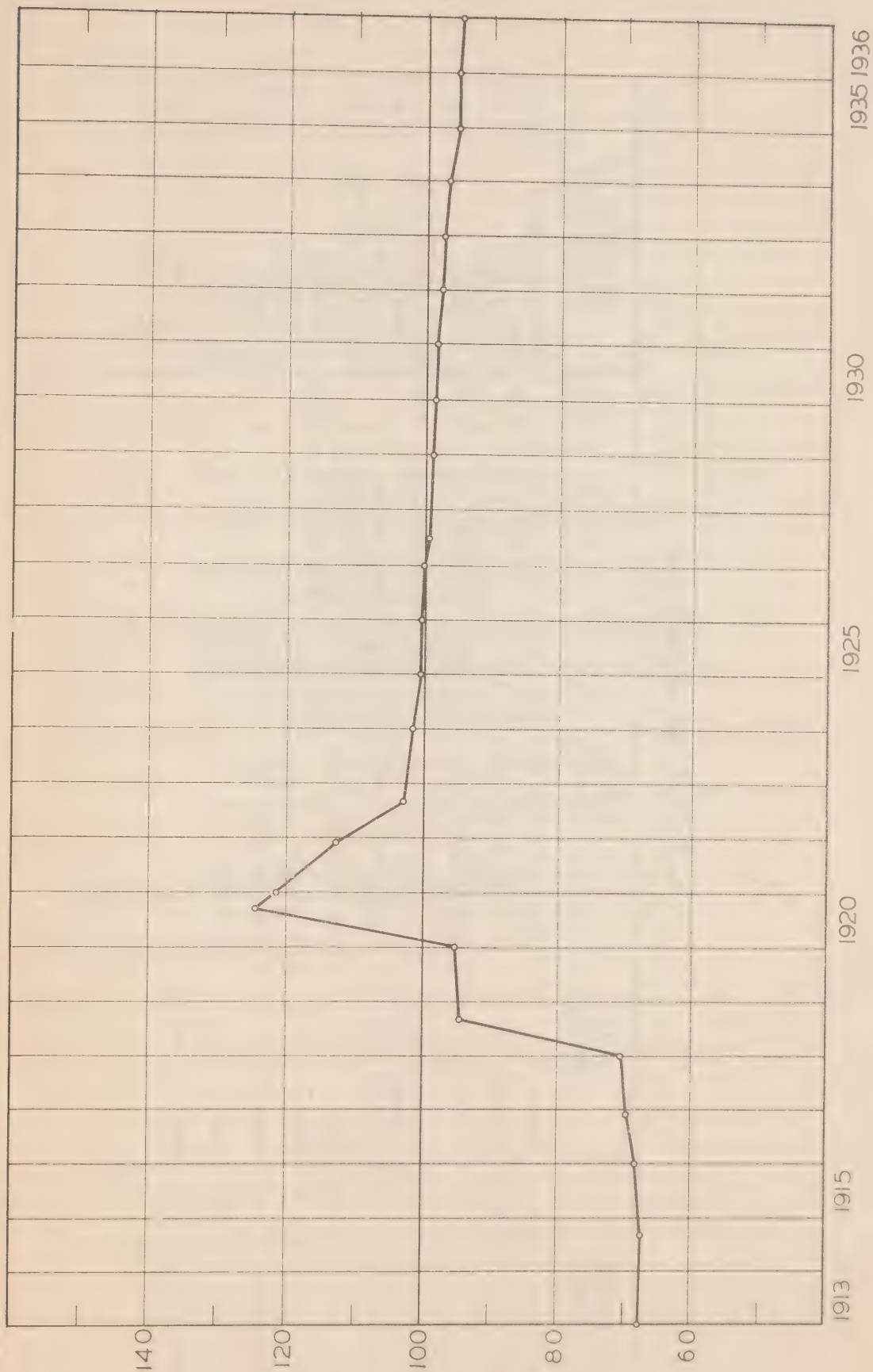


TABLE OF COMMODITIES AND WEIGHTS USED

AGRICULTURAL PRODUCTS		ANIMAL PRODUCTS		MINE PRODUCTS		FOREST PRODUCTS		MANUFACTURES AND MISCELLANEOUS	
Wheat	12.65	Horses	0.09	Anthracite Coal	5.26	Logs, Posts, Poles and Piling	1.40	Petroleum Products ...	2.40
Corn	0.68	Livestock	1.15	Bituminous Coal	13.64	Cordwood and Firewood	2.00	Sugar	0.60
Oats	1.62	Dressed Meats (fresh) ..	0.46	Lignite Coal	2.50	Pulpwood	3.80	Iron, pig	0.37
Barley	1.17	Dressed Meats, (cured) & other packing house pds.	0.53	Coke	1.32	Lumber, Timber, Shingles, Box, Grate & Cooperage Material	6.40	Iron and Steel	1.47
Rye	0.26	Eggs	0.15	Ores & Concentrates ..	3.78			Cement	1.10
Flax	0.16	Butter	0.17	Sand and Gravel ...	4.70			Bricks and Artificial Stone	0.88
Flour	2.21	Cheese	0.11	Stone	1.50			Lime and Plaster	0.40
Hay and Straw ...	0.88	Wool	0.05	Asphalt	0.23			Sewer Pipe and Drain Tile	0.10
Apples	0.28	Hides and Leather ..	0.16	Salt	0.34			Agricultural Implements	0.40
Potatoes	0.63							Automobiles	1.68
								Furniture	0.09
								Fertilizers	0.31
								Wood Pulp	1.50
								Newsprint	2.50
								Fish (fresh, frozen and cured)	0.11
								Canned Goods	0.36

B I B L I O G R A P H Y

Canadian Pacific Railway Tariffs

Canadian National Railway Tariffs

Board of Railway Commissioners for Canada,
(Annual Reports)

Board of Railway Commissioners for Canada,
(Judgments, Orders, Regulations and Rulings)

Statutes of Dominion of Canada

Statutes of the Province of Manitoba

Economic Principles of Transportation
(by W.T. Jackman)

Canada's Transportation Story
(by T. Marshall)

